

## SEQUENCE LISTING

```
<110> Kundig, Thomas M.
      Simard, John J. L.
<120> METHOD OF INDUCING A CTL RESPONSE
<130> MANNK.001CP2
<140> 09/776,232
<141> 2001-02-02
<150> 09/380,534
<151> 1999-09-01
<150> PCT/US98/14289
<151> 1998-07-10
<150> 08/988,320
<151> 1997-12-10
<150> CA 2,209,815
<151> 1997-07-10
<160> 569
<170> FastSEQ for Windows Version 4.0
<210> 1
<211> 9
<212> PRT
<213> Adenovirus 3
<400> 1
Leu Ile Val Ile Gly Ile Leu Ile Leu
<210> 2
<211> 10
<212> PRT
<213> Adenovirus 5
<400> 2
Ser Gly Pro Ser Asn Thr Pro Pro Glu Ile
                5
<210> 3
<211> 9
<212> PRT
<213> Adenovirus 5
<400> 3
Val Asn Ile Arg Asn Cys Cys Tyr Ile
```

```
1
           5
<210> 4
<211> 10
<212> PRT
<213> Adenovirus 5
<400> 4
Ser Gly Pro Ser Asn Ile Pro Pro Glu Ile
1 5
<210> 5
<211> 9
<212> PRT
<213> CSFV
<400> 5
Glu Asn Ala Leu Leu Val Ala Leu Phe
1 5
<210> 6
<211> 9
<212> PRT
<213> Dengue virus 4
<400> 6
Thr Pro Glu Gly Ile Ile Pro Thr Leu
              5
<210> 7
<211> 9
<212> PRT
<213> EEV
<400> 7
Cys Leu Gly Gly Leu Leu Thr Met Val
1 5
<210> 8
<211> 9
<212> PRT
<213> EBV
<400> 8
Asn Ile Ala Glu Gly Leu Arg Ala Leu
<210> 9
<211> 9
<212> PRT
```

<213> EBV

```
<400> 9
Asn Leu Arg Gly Thr Ala Leu Ala
1 5
<210> 10
<211> 9
<212> PRT
<213> EBV
<400> 10
Ala Leu Ala Ile Pro Gln Cys Arg Leu
<210> 11
<211> 9
<212> PRT
<213> EBV
<400> 11
Val Leu Lys Asp Ala Ile Lys Asp Leu
<210> 12
<211> 9
<212> PRT
<213> EBV
<400> 12
Phe Met Val Phe Leu Gln Thr His Ile
<210> 13
<211> 9
<212> PRT
<213> EBV
<400> 13
His Leu Ile Val Asp Thr Asp Ser Leu
1
               5
<210> 14
<211> 9
<212> PRT
<213> EBV
<400> 14
Ser Leu Gly Asn Pro Ser Leu Ser Val
           5
```

```
<211> 9
<212> PRT
<213> EBV
<400> 15
Pro Leu Ala Ser Ala Met Arg Met Leu
               5
<210> 16
<211> 9
<212> PRT
<213> EBV
<400> 16
Arg Met Leu Trp Met Ala Asn Tyr Ile
<210> 17
<211> 9
<212> PRT
<213> EBV
<400> 17
Met Leu Trp Met Ala Asn Tyr Ile Val
     5
<210> 18
<211> 9
<212> PRT
<213> EBV
Ile Leu Pro Gln Gly Pro Gln Thr Ala
               5
<210> 19
<211> 9
<212> PRT
<213> EBV
<400> 19
Pro Leu Arg Pro Thr Ala Pro Thr Ile
     5
<210> 20
<211> 9
<212> PRT
<213> EBV
<400> 20
Pro Leu Pro Pro Ala Thr Leu Thr Val
```

```
<210> 21
<211> 9
<212> PRT
<213> EBV
<400> 21
Arg Met His Leu Pro Val Leu His Val
    5
<210> 22
<211> 9
<212> PRT
<213> EBV
<400> 22
Pro Met Pro Leu Pro Pro Ser Gln Leu
               5
<210> 23
<211> 9
<212> PRT
<213> EBV
<400> 23
Gln Leu Pro Pro Pro Ala Ala Pro Ala
               5
<210> 24
<211> 9
<212> PRT
<213> EBV
<400> 24
Ser Met Pro Glu Leu Ser Pro Val Leu
<210> 25
<211> 9
<212> PRT
<213> EBV
<400> 25
Asp Leu Asp Glu Ser Trp Asp Tyr Ile
<210> 26
<211> 9
<212> PRT
<213> EBV
```

```
<400> 26
Pro Leu Pro Cys Val Leu Trp Pro Val
<210> 27
<211> 9
<212> PRT
<213> EBV
<400> 27
Ser Leu Glu Glu Cys Asp Ser Glu Leu
                5
<210> 28
<211> 9
<212> PRT
<213> EBV
<400> 28
Glu Ile Lys Arg Tyr Lys Asn Arg Val
1 5
<210> 29
<211> 9
<212> PRT
<213> EBV
<400> 29
Gln Leu Leu Gln His Tyr Arg Glu Val
            5
<210> 30
<211> 9
<212> PRT
<213> HCV-1
Leu Leu Gln His Tyr Arg Glu Val Ala
               5
<210> 31
<211> 9
<212> PRT
<213> EBV
<400> 31
Leu Leu Lys Gln Met Cys Pro Ser Leu
<210> 32
<211> 9
```

```
<212> PRT
<213> EBV
<400> 32
Ser Ile Ile Pro Arg Thr Pro Asp Val
<210> 33
<211> 10
<212> PRT
<213> EBV
<400> 33
Leu Leu Asp Phe Val Arg Phe Met Gly Val
<210> 34
<211> 9
<212> PRT
<213> EBV
<400> 34
Ser Val Arg Asp Arg Leu Ala Arg Leu
                5
<210> 35
<211> 9
<212> PRT
<213> EBV
<400> 35
Ile Val Thr Asp Phe Ser Val Ile Lys
<210> 36
<211> 10
<212> PRT
<213> EBV
Ala Val Phe Asp Arg Lys Ser Asp Ala Lys
                5
<210> 37
<211> 8
<212> PRT
<213> EBV
<400> 37
Arg Tyr Ser Ile Phe Phe Asp Tyr
1
```

```
<210> 38
<211> 9
<212> PRT
<213> EBV
<400> 38
Gln Pro Arg Ala Pro Ile Arg Pro Ile
<210> 39
<211> 9
<212> PRT
<213> EBV
<400> 39
Arg Pro Pro Ile Phe Ile Arg Arg Leu
<210> 40
<211> 9
<212> PRT
<213> EBV
<400> 40
Glu Pro Asp Val Pro Pro Gly Ala Ile
<210> 41
<211> 9
<212> PRT
<213> EBV
<400> 41
Ile Pro Gln Cys Arg Leu Thr Pro Leu
                5
<210> 42
<211> 9
<212> PRT
<213> EBV
<400> 42
Gly Pro Gly Pro Gln Pro Gly Pro Leu
                5
<210> 43
<211> 9
<212> PRT
<213> EBV
<400> 43
```

```
Gln Pro Gly Pro Leu Glu Arg Ser Ile
<210> 44
<211> 9
<212> PRT
<213> EBV
<400> 44
Arg Pro Gln Lys Arg Pro Ser Cys Ile
     5
<210> 45
<211> 9
<212> PRT
<213> EBV
<400> 45
Pro Pro Thr Pro Leu Leu Thr Val Leu
               5
<210> 46
<211> 9
<212> PRT
<213> EBV
<400> 46
Thr Pro Ser Pro Pro Arg Met His Leu
1 5
<210> 47
<211> 9
<212> PRT
<213> EBV
<400> 47
Pro Pro Arg Met His Leu Pro Val Leu
               5
<210> 48
<211> 9
<212> PRT
<213> EBV
<400> 48
Val Pro Asp Gln Ser Met His Pro Leu
<210> 49
<211> 9
<212> PRT
```

```
<213> EBV
<400> 49
Pro Pro Ser Ile Asp Pro Ala Asp Leu
               5
<210> 50
<211> 9
<212> PRT
<213> EEV
<400> 50
Leu Pro Cys Val Leu Trp Pro Val Leu
         5
<210> 51
<211> 10
<212> PRT
<213> EBV
<400> 51
Cys Pro Ser Leu Asp Val Asp Ser Ile Ile
<210> 52
<211> 9
<212> PRT
<213> EBV
<400> 52
Thr Pro Asp Val Leu His Glu Asp Leu
<210> 53
<211> 9
<212> PRT
<213> EBV
<400> 53
Phe Leu Arg Gly Arg Ala Tyr Gly Leu
               5
<210> 54
<211> 9
<212> PRT
<213> EBV
<400> 54
Gln Ala Lys Trp Arg Leu Gln Thr Leu
               5
```

```
<210> 55
<211> 9
<212> PRT
<213> EBV
<400> 55
Ala Tyr Pro Leu His Glu Gln His Gly
<210> 56
<211> 9
<212> PRT
<213> EBV
<400> 56
Tyr Ile Lys Ser Phe Val Ser Asp Ala
                5
<210> 57
<211> 9
<212> PRT
<213> EBV
<400> 57
Arg Arg Arg Trp Arg Arg Leu Thr Val
                5
<210> 58
<211> 9
<212> PRT
<213> Hepatitus C virus
<400> 58
Arg Arg Ile Tyr Asp Leu Ile Glu Leu
<210> 59
<211> 9
<212> PRT
<213> EBV
<400> 59
Tyr Pro Leu His Glu Gln His Gly Met
<210> 60
<211> 9
<212> PRT
<213> Hepatits C virus
<400> 60
His Ser Lys Lys Cys Asp Glu Leu
```

```
5
 1
<210> 61
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 61
Ala Ser Arg Cys Trp Val Ala Met
                 5
<210> 62
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 62
Gly Gln Ile Val Gly Gly Val Tyr Leu
<210> 63
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 63
Arg Pro Leu Thr Asp Phe Asp Gln Gly Trp
                 5
<210> 64
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 64
Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
             · 5
<210> 65
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 65
Ala Asp Leu Met Gly Tyr Ile Pro Leu Val
                5
<210> 66
<211> 16
<212> PRT
```

<213> Hepatitis C virus

```
Met Ser Tyr Ser Trp Thr Gly Ala Leu Val Thr Pro Cys Ala Glu Glu
            5
<210> 67
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 67
Lys His Pro Asp Ala Thr Tyr Ser Arg
                5
1
<210> 68
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 68
Lys Leu Val Ala Leu Gly Ile Asn Ala Val
<210> 69
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 69
Gly Asp Phe Asp Ser Val Ile Asp Cys
<210> 70
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 70
Gly Asn Ala Ser Arg Cys Trp Val Ala
                5
1
<210> 71
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 71
Thr Arg Pro Pro Leu Gly Asn Trp Phe
```

```
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 72
Val Pro His Pro Asn Ile Glu Glu Val
                 5
<210> 73
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 73
Tyr Thr Gly Asp Phe Asp Ser Val Ile
                5
<210> 74
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 74
Ser Trp Ala Ile Lys Trp Glu Tyr
                 5
<210> 75
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 75
Lys His Pro Asp Ala Thr Tyr Ser Arg
<210> 76
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 76
Gly Asp Phe Asp Ser Val Ile Asp Cys
<210> 77
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
Arg Tyr Leu Lys Asp Gln Gln Leu Leu
```

```
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 78
Ile Val Gly Leu Asn Lys Ile Val Arg
<210> 79
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 79
Glu Ile Tyr Lys Arg Trp Ile Ile Leu
                 5
<210> 80
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 80
Gly Glu Ile Tyr Lys Arg Trp Ile Ile
                5
<210> 81
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 81
Glu Ile Lys Asp Thr Lys Glu Ala Leu
                5
<210> 82
<211> 8
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 82
Tyr Leu Lys Asp Gln Gln Leu Leu
<210> 83
<211> 11
<212> PRT
<213> Homo sapiens immunodeficiency virus
```

```
<400> 83
Ile Leu Gly Leu Asn Lys Ile Val Arg Met Tyr
                 5
<210> 84
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 84
Glu Arg Tyr Leu Lys Asp Gln Gln Leu
                 5
<210> 85
<211> 11
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 85
Tyr His Thr Gln Gly Tyr Phe Pro Gln Trp Gln
<210> 86
<211> 12
<212> PRT
<213> Homo sapiens immunodeficiency virus
Thr Gln Gly Tyr Phe Pro Gln Trp Gln Asn Tyr Thr
                5
<210> 87
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
Gly Arg Ala Phe Val Thr Ile Gly Lys
                5
<210> 88
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 88
Lys Arg Trp Ile Ile Leu Gly Leu Asn
<210> 89
<211> 10
```

```
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 89
Gln Val Pro Leu Arg Pro Met Thr Tyr Lys
<210> 90
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 90
Thr Gln Gly Tyr Phe Pro Gln Trp Gln
<210> 91
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 91
His Gln Ala Ile Ser Pro Arg Thr Leu
                 5
<210> 92
<211> 12
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 92
Gln Met Val His Gln Ala Ile Ser Pro Arg Thr Leu
<210> 93
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 93
Met Tyr Ala Pro Pro Ile Gly Gly Gln Ile
<210> 94
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus
<400> 94
Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
                5
```

```
<210> 95
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus
Met Pro Gly Arg Ala Phe Val Thr Ile
<210> 96
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 96
Ile Leu Lys Glu Pro Val His Gly Val
<210> 97
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
Ala Phe His His Val Ala Arg Glu Leu
<210> 98
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 98
Lys Leu Thr Pro Leu Cys Val Thr Leu
<210> 99
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 99
Ser Leu Leu Asn Ala Thr Asp Ile Ala Val
<210> 100
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 100
```

```
Val Ile Tyr Gln Tyr Met Asp Asp Leu
                 5
<210> 101
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 101
Ser Leu Tyr Asn Thr Val Ala Thr Leu
                5
<210> 102
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
                 5
<210> 103
<211> 11
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 103
Arg Leu Arg Asp Leu Leu Leu Ile Val Thr Arg
                5
<210> 104
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 104
Gln Val Pro Leu Arg Pro Met Thr Tyr Lys
<210> 105
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 105
Thr Val Tyr Tyr Gly Val Pro Val Trp Lys
                5
<210> 106
<211> 9
<212> PRT
```

```
<213> Homo sapiens immunodeficiency virus type 1
<400> 106
Arg Leu Arg Pro Gly Gly Lys Lys
<210> 107
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 107
Val Tyr Tyr Gly Val Pro Val Trp Lys
                 5
<210> 108
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 108
Val Pro Leu Arg Pro Met Thr Tyr Lys
                5
<210> 109
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 109
Ala Ile Phe Gln Ser Ser Met Thr Lys
                5
<210> 110
<211> 12
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 110
Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys
                 5
<210> 111
<211> 12
<213> Homo sapiens immunodeficiency virus type 1
<400> 111
Ala Cys Gln Gly Val Gly Gly Pro Gly Gly His Lys
                                     10
```

```
<210> 112
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 112
Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp
<210> 113
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 113
Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu
                 5
<210> 114
<211> 8
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 114
Gly Gly Lys Lys Lys Tyr Lys Leu
                 5
<210> 115
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 115
Arg Val Lys Glu Lys Tyr Gln His Leu
<210> 116
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 116
Asp Arg Phe Tyr Lys Thr Leu Arg Ala
<210> 117
<211> 16
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 117
Gly Val Arg Tyr Pro Leu Thr Phe Gly Trp Cys Tyr Lys Leu Val Pro
```

```
1 5 10 15
```

```
<210> 118
<211> 10
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
Lys Arg Trp Ile Ile Leu Gly Leu Asn Lys
               5
<210> 119
<211> 9
<212> PRT
<213> EBV
<400> 119
Lys Glu His Val Ile Gln Asn Ala Phe
     5
<210> 120
<211> 10
<212> PRT
<213> EBV
<400> 120
Glu Glu Asn Leu Leu Asp Phe Val Arg Phe
               5
<210> 121
<211> 10
<212> PRT
<213> EBV
<400> 121
Asp Thr Pro Leu Ile Pro Leu Thr Ile Phe
1 5
<210> 122
<211> 10
<212> PRT
<213> EBV
<400> 122
Gln Asn Gly Ala Leu Ala Ile Asn Thr Phe
               5
<210> 123
<211> 9
<212> PRT
```

<213> EBV

```
<400> 123
Arg Leu Arg Ala Glu Ala Gly Val Lys
<210> 124
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 124
Gly Leu Ser Pro Thr Val Trp Leu Ser Val
                 5
<210> 125
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 125
Trp Leu Ser Leu Leu Val Pro Phe Val
                5
<210> 126
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 126
Phe Leu Pro Ser Asp Phe Phe Pro Ser Val
<210> 127
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 127
Phe Leu Leu Ser Leu Gly Ile His Leu
<210> 128
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 128
Ser Leu Tyr Ala Asp Ser Pro Ser Val
               5
```

```
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 129
Gly Leu Ser Arg Tyr Val Ala Arg Leu
                 5
<210> 130
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 130
Leu Leu Val Pro Phe Val Gln Trp Phe Val
<210> 131
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 131
Ala Leu Met Pro Leu Tyr Ala Cys Ile
<210> 132
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 132
Leu Leu Pro Ile Phe Phe Cys Leu Trp Val
                5
<210> 133
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 133
Tyr Met Asp Asp Val Val Leu Gly Ala
<210> 134
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 134
Leu Leu Cys Leu Ile Phe Leu Leu
```

```
<210> 135
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 135
Leu Leu Asp Tyr Gln Gly Met Leu Pro Val
                5
<210> 136
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 136
Ser Ile Val Ser Pro Phe Ile Pro Leu Leu
                 5
<210> 137
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 137
Phe Leu Leu Thr Arg Ile Leu Thr Ile
                5
<210> 138
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 138
Tyr Val Asn Val Asn Met Gly Leu Lys
<210> 139
<211> 11
<212> PRT
<213> Hepatitis B virus
Ser Thr Leu Pro Glu Thr Thr Val Val Arg Arg
                 5
                                     10
<210> 140
<211> 12
<212> PRT
<213> Hepatitis B virus
```

```
<400> 140
Ile Pro Gln Ser Leu Asp Ser Trp Trp Thr Ser Leu
<210> 141
<211> 8
<212> PRT
<213> Hepatitis B virus
<400> 141
Met Gly Leu Lys Phe Arg Gln Leu
<210> 142
<211> 9
<212> PRT
<213> Hepatitis B virus
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 142
Ser Thr Asx Xaa Gln Ser Gly Xaa Gln
<210> 143
<211> 11
<212> PRT
<213> Homo Sapiens cytomegalovirus
<400> 143
Phe Ile Ala Gly Asn Ser Ala Tyr Glu Tyr Val
<210> 144
<211> 12
<212> PRT
<213> Homo Sapiens cytomegalovirus
Ser Asp Glu Glu Glu Ala Ile Val Ala Tyr Thr Leu
                 5
                                     10
<210> 145
<211> 15
<212> PRT
<213> Homo Sapiens cytomegalovirus
<400> 145
Asp Asp Val Trp Thr Ser Gly Ser Asp Ser Asp Glu Glu Leu Val
```

```
5
                                    10
                                                        15
 1
<210> 146
<211> 9
<212> PRT
<213> Homo Sapiens cytomegalovirus
<400> 146
Ile Pro Ser Ile Asn Val His His Tyr
<210> 147
<211> 10
<212> PRT
<213> Homo Sapiens cytomegalovirus
<400> 147
Asn Leu Val Pro Met Val Ala Thr Val Gln
                5
<210> 148
<211> 15
<212> PRT
<213> Homo Sapiens cytomegalovirus
Arg Lys Thr Pro Arg Val Thr Gly Gly Gly Ala Met Ala Gly Ala
                 5
<210> 149
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 149
Asp Leu Met Gly Tyr Ile Pro Leu Val
                5
<210> 150
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 150
Leu Leu Ala Leu Leu Ser Cys Leu Thr Val
<210> 151
```

<211> 8 <212> PRT

<213> Hepatitis C virus

```
<400> 151
Ile Leu His Thr Pro Gly Cys Val
<210> 152
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 152
Gln Leu Arg Arg His Ile Asp Leu Leu Val
<210> 153
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 153
Asp Leu Cys Gly Ser Val Phe Leu Val
                5
<210> 154
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 154
Ser Met Val Gly Asn Trp Ala Lys Val
<210> 155
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 155
His Leu His Gln Asn Ile Val Asp Val
<210> 156
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 156
Phe Leu Leu Ala Asp Ala Arg Val
             5
```

```
<211> 13
<212> PRT
<213> Hepatitis C virus
<400> 157
Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Val
<210> 158
<211> 11
<212> PRT
<213> Hepatitis C virus
<400> 158
Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val
                 5
<210> 159
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 159
Leu Leu Ala Pro Gly Ala Lys Gln Asn Val
                5
<210> 160
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 160
Leu Leu Phe Asn Ile Leu Gly Gly Trp Val
                5
<210> 161
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 161
Tyr Leu Val Ala Tyr Gln Ala Thr Val
            5
<210> 162
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 162
Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu
                                     10
```

```
<210> 163
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 163
Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile
<210> 164
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 164
Ser Leu Met Ala Phe Thr Ala Ala Val
<210> 165
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 165
Cys Ile Asn Gly Val Cys Trp Thr Val
                 5
1
<210> 166
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 166
Leu Leu Cys Pro Ala Gly His Ala Val
                5
<210> 167
<211> 9
<212> PRT
<213> Hepatitis C virus
Ile Leu Asp Ser Phe Asp Pro Leu Val
                5
<210> 168
<211> 9
<212> PRT
<213> Hepatitis C virus
```

```
<400> 168
Ile Leu Ala Gly Tyr Gly Ala Gly Val
<210> 169
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 169
Gly Leu Gln Asp Cys Thr Met Leu Val
                5
<210> 170
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 170
Thr Gly Ala Pro Val Thr Tyr Ser Thr Tyr
<210> 171
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 171
His Met Trp Asn Phe Ile Ser Gly Ile
1
                5
<210> 172
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 172
Arg Val Cys Glu Lys Met Ala Leu Tyr
                 5
<210> 173
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 173
Thr Ile Asn Tyr Thr Ile Phe Lys
<210> 174
<211> 8
```

```
<212> PRT
<213> Hepatitis C virus
<400> 174
Tyr Ile Ser Trp Cys Leu Trp Trp
                 5
<210> 175
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 175
Gly Pro Arg Leu Gly Val Arg Ala Thr
<210> 176
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 176
Ser Phe Asn Cys Gly Glu Phe Phe
<210> 177
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 177
Thr Glu Met Glu Lys Glu Gly Lys Ile
<210> 178
<211> 9
<213> Homo Sapiens immunodeficiency virus type 1
<400> 178
Lys Ile Arg Leu Arg Pro Gly Gly Lys
<210> 179
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 179
Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr
                 5
```

```
<210> 180
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 180
Ala Ile Phe Gln Ser Ser Met Thr Lys
<210> 181
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 181
Thr Leu Tyr Cys Val His Gln Arg Ile
                5
<210> 182
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Ile Tyr Gln Glu Pro Phe Lys Asn Leu Lys
                 5
<210> 183
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 183
Lys Tyr Lys Leu Lys His Ile Val Trp
<210> 184
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 184
Leu Phe Cys Ala Ser Asp Ala Lys Ala Tyr
<210> 185
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 185
```

```
Gln Ala Ile Ser Pro Arg Thr Leu Asn Ala Trp
<210> 186
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 186
Glu Val Ile Pro Met Phe Ser Ala Leu
                 5
<210> 187
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Glu Thr Phe Tyr Val Asp Gly Ala Ala Asn Arg
                 5
<210> 188
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 188
Arg Leu Arg Asp Leu Leu Leu Ile Val Thr Arg
                 5
<210> 189
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 189
Pro Ile Gln Lys Glu Thr Trp Glu Thr Trp
                                     10
<210> 190
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 190
Arg Ile Lys Gln Ile Ile Asn Met Trp
<210> 191
<211> 9
<212> PRT
```

```
<213> Homo Sapiens immunodeficiency virus type 1
<400> 191
Ile Thr Leu Trp Gln Arg Pro Leu Val
                5
<210> 192
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 192
Asp Thr Val Leu Glu Glu Met Asn Leu
 1
                 5
<210> 193
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 193
Ile Thr Leu Trp Gln Arg Pro Leu Val
<210> 194
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 194
Ser Pro Arg Thr Leu Asn Ala Trp Val
<210> 195
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 195
Ala Thr Pro Gln Asp Leu Asn Thr Met
                 5
<210> 196
<211> 10
<213> Homo Sapiens immunodeficiency virus type 1
<400> 196
Arg Pro Asn Asn Asn Thr Arg Lys Ser Ile
```

```
<210> 197
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 197
Ile Pro Arg Arg Ile Arg Gln Gly Leu
<210> 198
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 198
Glu Leu Arg Ser Leu Tyr Asn Thr Val
                 5
<210> 199
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 199
Trp Pro Thr Val Arg Glu Arg Met
1
                 5
<210> 200
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 200
Phe Leu Lys Glu Lys Gly Gly Leu
<210> 201
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 201
Lys Ile Arg Leu Arg Pro Gly Gly Lys Lys
                 5
<210> 202
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 202
Ile Arg Leu Arg Pro Gly Gly Lys Lys
```

```
<210> 203
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 203
Gly Arg Arg Gly Trp Glu Ala Leu Lys Tyr
<210> 204
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 204
Gln Val Pro Leu Arg Pro Met Thr Tyr Lys
<210> 205
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 205
Arg Tyr Leu Lys Asp Gln Gln Leu
                5
<210> 206
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 206
Arg Arg Gln Asp Ile Leu Asp Leu Trp Ile
                 5
                                     10
<210> 207
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 207
Arg Tyr Pro Leu Thr Phe Gly Trp
<210> 208
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
```

1

5

```
<400> 208
Trp Ala Ser Arg Glu Leu Glu Arg Phe
<210> 209
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 209
Thr Val Leu Asp Val Gly Asp Ala Tyr
<210> 210
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 210
Val Pro Val Trp Lys Glu Ala Thr Thr Leu
                 5
<210> 211
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 211
Asn Ser Ser Lys Val Ser Gln Asn Tyr
<210> 212
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Pro Pro Ile Pro Val Gly Asp Ile Tyr
                5
<210> 213
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 213
His Pro Asp Ile Val Ile Tyr Gln Tyr
```

<210> 214

```
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 214
Thr Ala Val Pro Trp Asn Ala Ser Trp
                 5
<210> 215
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 215
Asn Pro Val Pro Val Gly Asn Ile Tyr
      5
<210> 216
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 216
Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
1
                 5
<210> 217
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 217
Gly His Gln Ala Ala Met Gln Met Leu
<210> 218
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 218
Arg Leu Arg Pro Gly Gly Lys Lys Tyr
<210> 219
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Tyr Pro Gly Ile Lys Val Arg Gln Leu
1
```

```
<210> 220
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 220
Gly Ala Glu Thr Phe Tyr Val Asp Gly Ala
                 5
<210> 221
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 221
Asn Ala Asn Pro Asp Cys Lys Thr Ile
                 5
<210> 222
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 222
Arg Met Tyr Ser Pro Thr Ser Ile
                 5
<210> 223
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 223
Val Pro Val Trp Lys Glu Ala Thr Thr
                5
<210> 224
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 224
Ile Ser Pro Arg Thr Leu Asn Ala Trp
<210> 225
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
```

```
<400> 225
Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp
                 5
<210> 226
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 226
Lys Ala Phe Ser Pro Glu Val Ile Pro Met Phe
                 5
1
<210> 227
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 227
Gln Ala Ser Gln Glu Val Lys Asn Trp
<210> 228
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 228
Gln Ala Ser Gln Asp Val Lys Asn Trp
                5
<210> 229
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 229
His Thr Gln Gly Tyr Phe Pro Asp Trp Gln
                5
<210> 230
<211> 9
<213> Homo Sapiens immunodeficiency virus type 1
<400> 230
Tyr Phe Pro Asp Trp Gln Asn Tyr Thr
<210> 231
<211> 10
```

```
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 231
Thr Ser Thr Leu Gln Glu Gln Ile Gly Trp
<210> 232
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 232
Arg Leu Arg Pro Gly Gly Lys Lys Lys Tyr
<210> 233
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 233
Leu Gly Leu Asn Lys Ile Val Arg Met Tyr
                 5
<210> 234
<211> 12
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 234
Leu Val Gly Lys Leu Asn Trp Ala Ser Gln Ile Tyr
                5
<210> 235
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Ile Leu Lys Glu Pro Val His Gly Val Tyr
                 5
<210> 236
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 236
Thr Gln Gly Tyr Phe Pro Asp Trp Gln Asn Tyr
                 5
```

```
<210> 237
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 237
Ala Val Asp Leu Ser His Phe Leu
<210> 238
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 238
Val Ile Pro Met Phe Ser Ala Leu
               5
<210> 239
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Phe Asn Cys Gly Glu Phe Phe Tyr
<210> 240
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 240
Ser Phe Asn Cys Gly Glu Phe Phe
<210> 241
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 241
Pro Leu Thr Phe Gly Trp Cys Tyr Lys Leu
<210> 242
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 242
```

```
Val Leu Glu Trp Arg Phe Asp Ser Arg Leu
                 5
<210> 243
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 243
Phe Pro Val Thr Pro Gln Val Pro Leu Arg
                 5
<210> 244
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Thr Pro Gly Pro Gly Val Arg Tyr Pro Leu
                 5
<210> 245
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 245
Gln Ala Ser Gln Glu Val Lys Asn Trp
                5
<210> 246
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 246
Val Pro Leu Asp Glu Asp Phe Arg Lys Tyr
                 5
                                     10
<210> 247
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 247
Asn Pro Asp Ile Val Ile Tyr Gln Tyr
<210> 248
<211> 9
<212> PRT
```

```
<213> Homo Sapiens immunodeficiency virus
<400> 248
Arg Ala Ile Glu Ala Gln Ala His Leu
<210> 249
<211> 8
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 249
Thr Ala Phe Thr Ile Pro Ser Ile
 1
<210> 250
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 250
Val His Pro Val His Ala Gly Pro Ile Ala
<210> 251
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 251
Asn Cys Ser Phe Asn Ile Ser Thr Ser Ile
                 5
                                     10
<210> 252
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 252
Cys Thr Asn Val Ser Thr Val Gln Cys
                 5
<210> 253
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 253
Ile Gly Pro Gly Arg Ala Phe His Thr
                 5
```

```
<210> 254
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 254
Asn Pro Asp Ile Val Ile Tyr Gln Tyr
<210> 255
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 255
Glu Pro Ile Val Gly Ala Glu Thr Phe Tyr
                5
<210> 256
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 256
Glu Pro Ile Val Gly Ala Glu Thr Phe
                 5
<210> 257
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 257
Ser Pro Ala Ile Phe Gln Ser Ser Met
<210> 258
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus
Val Pro Leu Asp Lys Asp Phe Arg Lys Tyr
                 5
<210> 259
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 259
Ile Pro Leu Thr Glu Glu Ala Glu Leu
```

```
1 5
```

```
<210> 260
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 260
Arg Pro Gln Val Pro Leu Arg Pro Met Thr Tyr
                 5
                                     10
<210> 261
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 261
Phe Pro Val Arg Pro Gln Val Pro Leu
                5
<210> 262
<211> 9
<213> Homo Sapiens immunodeficiency virus
<400> 262
Asp Pro Asn Pro Gln Glu Val Val Leu
                 5
<210> 263
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 263
Arg Pro Ile Val Ser Thr Gln Leu Leu
1
                 5
<210> 264
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
<400> 264
Ile Pro Leu Thr Glu Glu Ala Glu Leu
<210> 265
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus
```

```
<400> 265
Asp Pro Asn Pro Gln Glu Val Val Leu
      5
<210> 266
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 2
<400> 266
Ala Met Gln Met Leu Lys Glu Thr Ile
<210> 267
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 2
Thr Pro Tyr Asp Ile Asn Gln Met Leu
                5
<210> 268
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 268
Arg Arg Trp Ile Gln Leu Gly Leu Gln Lys
<210> 269
<211> 15
<213> Homo Sapiens immunodeficiency virus type 1
Gly Ile Trp Gly Cys Ser Gly Lys Leu Ile Cys Thr Thr Ala Val
<210> 270
<211> 15
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 270
Ala Leu Ile Trp Glu Asp Leu Arg Ser Leu Cys Leu Phe Ser Tyr
                5
                                                        15
```

<210> 271

```
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 6b
Gly Leu His Cys Tyr Glu Gln Leu Val
                 5
<210> 272
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 6b
<400> 272
Pro Leu Lys Gln His Phe Gln Ile Val
<210> 273
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 11
<400> 273
Arg Leu Val Thr Leu Lys Asp Ile Val
<210> 274
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 274
Thr Leu Gly Ile Val Cys Pro Ile Cys
<210> 275
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 275
Gly Thr Leu Gly Ile Val Cys Pro Ile
                5
<210> 276
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
Met Leu Asp Leu Gln Pro Glu Thr Thr
```

```
<210> 277
<211> 10
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 277
Tyr Met Leu Asp Leu Gln Pro Glu Thr Thr
                 5
<210> 278
<211> 8
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 278
Arg Pro Arg Lys Leu Pro Gln Leu
                5
<210> 279
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 279
Arg Ala His Tyr Asn Ile Val Thr Phe
1
                5
<210> 280
<211> 8
<212> PRT
<213> HSV
<400> 280
Ser Ser Ile Glu Phe Ala Arg Leu
<210> 281
<211> 9
<212> PRT
<213> HSV-1
<400> 281
Gly Ile Gly Ile Gly Val Leu Ala Ala
                5
<210> 282
<211> 9
<212> PRT
<213> HSV-1
```

```
<400> 282
Asp Tyr Ala Thr Leu Gly Val Gly Val
<210> 283
<211> 11
<212> PRT
<213> HSV-1
<400> 283
Leu Tyr Arg Thr Phe Ala Gly Asn Pro Arg Ala
                 5
<210> 284
<211> 8
<212> PRT
<213> HSV-1
<400> 284
Gln Thr Phe Asp Phe Gly Arg Leu
<210> 285
<211> 9
<212> PRT
<213> HSV-2
<400> 285
Gly Ala Gly Ile Gly Val Ala Val Leu
               5
<210> 286
<211> 9
<212> PRT
<213> Homo sapiens T-cell lymphotropic virus type 1
<400> 286
Leu Leu Phe Gly Tyr Pro Val Tyr Val
                5
<210> 287
<211> 9
<212> PRT
<213> Haemophilus influenzae
<400> 287
Gly Ile Leu Gly Phe Val Phe Thr Leu
<210> 288
<211> 10
```

```
<212> PRT
<213> haemophilus influenzae
<400> 288
Ile Leu Gly Phe Val Phe Thr Leu Thr Val
<210> 289
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 289
Ile Leu Arg Gly Ser Val Ala His Lys
<210> 290
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 290
Lys Thr Gly Gly Pro Ile Tyr Lys Arg
                5
<210> 291
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 291
Glu Leu Arg Ser Arg Tyr Trp Ala Ile
<210> 292
<211> 8
<212> PRT
<213> haemophilus influenzae
Leu Arg Ser Arg Tyr Trp Ala Ile
                5
<210> 293
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 293
Glu Asp Leu Arg Val Leu Ser Phe Ile
                5
```

```
<210> 294
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 294
Gly Glu Ile Ser Pro Leu Pro Ser Leu
                 5
<210> 295
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 295
Phe Glu Asp Leu Arg Val Leu Ser Phe
<210> 296
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 296
Val Ser Asp Gly Gly Pro Asn Leu Tyr
<210> 297
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 297
Cys Thr Glu Leu Lys Leu Ser Asp Tyr
<210> 298
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 298
Ala Ile Met Asp Lys Asn Ile Ile Leu
<210> 299
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 299
```

```
Ile Met Asp Lys Asn Ile Ile Leu Lys Ala
                 5
<210> 300
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 300
Ser Arg Tyr Trp Ala Ile Arg Thr Arg
               5
<210> 301
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 301
Thr Tyr Gln Arg Thr Arg Ala Leu Val
                5
<210> 302
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 302
Thr Tyr Val Ser Val Ser Thr Ser Thr Leu
     5
<210> 303
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 303
Ile Tyr Ser Thr Val Ala Ser Ser Leu
<210> 304
<211> 8
<212> PRT
<213> haemophilus influenzae
<400> 304
Phe Glu Ala Asn Gly Asn Leu Ile
                5
<210> 305
<211> 9
<212> PRT
```

```
<213> haemophilus influenzae
<400> 305
Ile Glu Gly Gly Trp Thr Gly Met Ile
<210> 306
<211> 8
<212> PRT
<213> haemophilus influenzae
<400> 306
Ser Asp Tyr Glu Gly Arg Leu Ile
                5
<210> 307
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 307
Glu Glu Gly Ala Ile Val Gly Glu Ile
<210> 308
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 308
Ala Ser Asn Glu Asn Met Glu Thr Met
<210> 309
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 309
Ala Ser Asn Glu Asn Met Asp Ala Met
<210> 310
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 310
Lys Leu Gly Glu Phe Tyr Asn Gln Met Met
```

```
<210> 311
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 311
Lys Ala Gly Glu Phe Tyr Asn Gln Met Met
<210> 312
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 312
Leu Tyr Gln Asn Val Gly Thr Tyr Val
<210> 313
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 313
Thr Tyr Val Ser Val Gly Thr Ser Thr Leu
                 5
<210> 314
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 314
Val Tyr Gln Ile Leu Ala Ile Tyr Ala
<210> 315
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 315
Ile Tyr Ala Thr Val Ala Gly Ser Leu
<210> 316
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 316
Thr Tyr Val Ser Val Gly Thr Ser Thr Ile
```

1 5 10

```
<210> 317
<211> 8
<212> PRT
<213> Haemophilus influenzae
<400> 317
Phe Glu Ser Thr Gly Asn Leu Ile
                5
<210> 318
<211> 9
<212> PRT
<213> JHMV
<400> 318
Ala Pro Thr Ala Gly Ala Phe Phe
               5
<210> 319
<211> 9
<212> PRT
<213> LCMV
<400> 319
Arg Pro Gln Ala Ser Gly Val Tyr Met
<210> 320
<211> 9
<212> PRT
<213> LCMV
<400> 320
Phe Gln Pro Gln Asn Gly Gln Phe Ile
                5
<210> 321
<211> 11
<212> PRT
<213> LCMV
<400> 321
Ser Gly Val Glu Asn Pro Gly Gly Tyr Cys Leu
<210> 322
<211> 10
<212> PRT
<213> LCMV
```

```
<400> 322
Lys Ala Val Tyr Asn Phe Ala Thr Cys Gly
1 5
<210> 323
<211> 9
<212> PRT
<213> MCMV
<400> 323
Tyr Pro His Phe Met Pro Thr Asn Leu
1
               5
<210> 324
<211> 9
<212> PRT
<213> MHV
<400> 324
Cys Leu Ser Trp Asn Gly Pro His Leu
<210> 325
<211> 9
<212> PRT
<213> MMTV
<400> 325
Ser Phe Ala Val Ala Thr Thr Ala Leu
1 5
<210> 326
<211> 9
<212> PRT
<213> MMTV
<400> 326
Ser Tyr Glu Thr Phe Ile Ser Arg Leu
               5
<210> 327
<211> 8
<212> PRT
<213> MMTV
<400> 327
Ala Asn Tyr Asp Phe Ile Cys Val
```

<210> 328

```
<211> 8
<212> PRT
<213> Murine Leukemia virus
<400> 328
Lys Ser Pro Trp Phe Thr Thr Leu
               5
<210> 329
<211> 8
<212> PRT
<213> Murine leukemia virus
<400> 329
Ser Ser Trp Asp Phe Ile Thr Val
      5
<210> 330
<211> 9
<212> PRT
<213> Murine leukemia virus
<400> 330
Cys Cys Leu Cys Leu Thr Val Phe Leu
               5
<210> 331
<211> 9
<212> PRT
<213> Polio virus
<400> 331
Ser Pro Ser Tyr Val Tyr His Gln Phe
               5
<210> 332
<211> 11
<212> PRT
<213> Polio virus
<400> 332
Ser Arg Arg Tyr Pro Asp Ala Val Tyr Leu His
      5
<210> 333
<211> 9
<212> PRT
<213> MV
<400> 333
Arg Arg Tyr Pro Asp Ala Val Tyr Leu
```

```
<210> 334
<211> 9
<212> PRT
<213> MV
<400> 334
Tyr Pro Ala Leu Gly Leu His Glu Phe
<210> 335
<211> 9
<212> PRT
<213> Rotavirus sp.
<400> 335
Asp Pro Val Ile Asp Arg Leu Tyr Leu
<210> 336
<211> 9
<212> PRT
<213> Rotavirus sp.
<400> 336
Ser Pro Gly Arg Ser Phe Ser Tyr Phe
<210> 337
<211> 8
<212> PRT
<213> Rotavirus sp.
<400> 337
Thr Tyr Lys Asp Thr Val Gln Leu
<210> 338
<211> 10
<212> PRT
<213> Polio virus
Phe Tyr Asp Gly Phe Ser Lys Val Pro Leu
                                     10
<210> 339
<211> 9
<212> PRT
<213> Pseudorabies virus
```

```
<400> 339
Ile Ala Gly Ile Gly Ile Leu Ala Ile
                5
<210> 340
<211> 9
<212> PRT
<213> SV
<400> 340
Val Glu Ala Glu Ile Ala His Gln Ile
                5
<210> 341
<211> 8
<212> PRT
<213> SV
<400> 341
Ile Ile Tyr Arg Phe Leu Leu Ile
               5
<210> 342
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 342
Val Gly Pro Val Phe Pro Pro Gly Met
                5
<210> 343
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 343
Tyr Ser Gly Tyr Ile Phe Arg Asp Leu
               5
1
<210> 344
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 344
Ser Tyr Ile Gly Ser Ile Asn Asn Ile
<210> 345
<211> 12
```

```
<212> PRT
<213> Simian Virus 40
<400> 345
Glu Gly Cys Thr Pro Tyr Asp Ile Asn Gln Met Leu
                5
<210> 346
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 346
Phe Ala Pro Gly Asn Tyr Pro Ala Leu
<210> 347
<211> 8
<212> PRT
<213> Simian Virus 40
<400> 347
Val Val Tyr Asp Phe Leu Lys Cys
                5
<210> 348
<211> 10
<212> PRT
<213> Simian Virus 40
<400> 348
Ser Ala Ile Asn Asn Tyr Ala Gln Lys Leu
                5
<210> 349
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 349
Cys Lys Gly Val Asn Lys Glu Tyr Leu
                5
<210> 350
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 350
Gln Gly Ile Asn Asn Leu Asp Asn Leu
```

```
<210> 351
<211> 9
<212> PRT
<213> Simian Virus 40
<400> 351
Asn Asn Leu Asp Asn Leu Arg Asp Tyr
<210> 352
<211> 9
<212> PRT
<213> Haemophilus influenzae
<400> 352
Ser Glu Phe Leu Leu Glu Lys Arg Ile
<210> 353
<211> 8
<212> PRT
<213> Haemophilus influenzae
<400> 353
Arg Gly Tyr Val Tyr Gln Gly Leu
                 5
<210> 354
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 354
Glu Ala Asp Pro Thr Gly His Ser Tyr
<210> 355
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 355
Val Ser Asp Gly Gly Pro Asn Leu Tyr
<210> 356
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 356
```

```
Cys Thr Glu Leu Lys Leu Ser Asp Tyr
                 5
<210> 357
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 357
Glu Val Asp Pro Ile Gly His Leu Tyr
<210> 358
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 358
Met Leu Leu Ser Val Pro Leu Leu Gly
                5
<210> 359
<211> 9
<212> PRT
<213> Hepatitis B virus
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 359
Ser Thr Asx Xaa Gln Ser Gly Xaa Gln
                5
<210> 360
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 360
Tyr Met Asp Gly Thr Met Ser Gln Val
<210> 361
<211> 9
<212> PRT
<213> Homo sapiens immonodeficiency virus type 1
Ile Leu Lys Glu Pro Val His Gly Val
                 5
```

```
<210> 362
<211> 10
<212> PRT
<213> Haemophilus influenzae
<400> 362
Ile Leu Gly Phe Val Phe Thr Leu Thr Val
<210> 363
<211> 9
<212> PRT
<213> HTLV-1
<400> 363
Leu Leu Phe Gly Tyr Pro Val Tyr Val
                 5
<210> 364
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 364
Gly Leu Ser Pro Thr Val Trp Leu Ser Val
                5
<210> 365
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 365
Trp Leu Ser Leu Leu Val Pro Phe Val
<210> 366
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 366
Phe Leu Pro Ser Asp Phe Phe Pro Ser Val
                5
                                     10
<210> 367
<211> 9
<212> PRT
<213> EBV
```

```
<400> 367
Cys Leu Gly Gly Leu Leu Thr Met Val
 1
<210> 368
<211> 11
<212> PRT
<213> Homo Sapiens cytomegalovirus
<400> 368
Phe Leu Ala Gly Asn Ser Ala Tyr Glu Tyr Val
                 5
<210> 369
<211> 10
<212> PRT
<213> Haemophilus influenzae
<400> 369
Lys Leu Gly Glu Phe Tyr Asn Gln Met Met
                 5
<210> 370
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 370
Lys Leu Val Ala Leu Gly Ile Asn Ala Val
                5
<210> 371
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 371
Asp Leu Met Gly Tyr Ile Pro Leu Val
1
                 5
<210> 372
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 11
<400> 372
Arg Leu Val Thr Leu Lys Asp Ile Val
<210> 373
<211> 9
```

```
<212> PRT
<213> Homo Sapiens
<400> 373
Met Leu Leu Ala Val Leu Tyr Cys Leu
<210> 374
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 374
Ala Ala Gly Ile Gly Ile Leu Thr Val
<210> 375
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 375
Tyr Leu Glu Pro Gly Pro Val Thr Ala
               5
<210> 376
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 376
Ile Leu Asp Gly Thr Ala Thr Leu Arg Leu
                5
<210> 377
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 377
Leu Leu Asp Gly Thr Ala Thr Leu Arg Leu
                5
<210> 378
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 378
Ile Thr Asp Gln Val Pro Phe Ser Val
```

```
<210> 379
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 379
Lys Thr Trp Gly Gln Tyr Trp Gln Val
<210> 380
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 380
Thr Ile Thr Asp Gln Val Pro Phe Ser Val
      5
<210> 381
<211> 9
<212> PRT
<213> Homo Sapiens immonodeficiency virus type 1
<400> 381
Ala Phe His His Val Ala Arg Glu Leu
                5
<210> 382
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 382
Tyr Leu Asn Lys Ile Gln Asn Ser Leu
               5
<210> 383
<211> 10
<212> PRT
<213> Plasmodium falciparum
<400> 383
Met Met Arg Lys Leu Ala Ile Leu Ser Val
<210> 384
<211> 10
<212> PRT
<213> haemophilus influenzae
<400> 384
```

```
Lys Ala Gly Glu Phe Tyr Asn Gln Met Met
<210> 385
<211> 9
<212> PRT
<213> EBV
<400> 385
Asn Ile Ala Glu Gly Leu Arg Ala Leu
     5
<210> 386
<211> 9
<212> PRT
<213> EBV
<400> 386
Asn Leu Arg Gly Thr Ala Leu Ala
<210> 387
<211> 9
<212> PRT
<213> EBV
<400> 387
Ala Leu Ala Ile Pro Gln Cys Arg Leu
<210> 388
<211> 9
<212> PRT
<213> EBV
<400> 388
Val Leu Lys Asp Ala Ile Lys Asp Leu
<210> 389
<211> 9
<212> PRT
<213> EBV
<400> 389
Phe Met Val Phe Ile Gln Thr His Ile
                5
<210> 390
<211> 9
<212> PRT
```

```
<213> EBV
<400> 390
His Leu Ile Val Asp Thr Asp Ser Leu
<210> 391
<211> 9
<212> PRT
<213> EBV
<400> 391
Ser Leu Gly Asn Pro Ser Leu Ser Val
                5
<210> 392
<211> 9
<212> PRT
<213> EBV
<400> 392
Pro Leu Ala Ser Ala Met Arg Met Leu
<210> 393
<211> 9
<212> PRT
<213> EBV
<400> 393
Arg Met Leu Trp Met Ala Asn Tyr Ile
<210> 394
<211> 9
<212> PRT
<213> EBV
<400> 394
Met Leu Trp Met Ala Asn Tyr Ile Val
<210> 395
<211> 9
<212> PRT
<213> EBV
<400> 395
Ile Leu Pro Gln Gly Pro Gln Thr Ala
                5
```

```
<210> 396
<211> 9
<212> PRT
<213> EBV
<400> 396
Pro Leu Arg Pro Thr Ala Pro Thr Ile
                5
<210> 397
<211> 9
<212> PRT
<213> EBV
<400> 397
Pro Leu Pro Pro Ala Thr Leu Thr Val
                5
<210> 398
<211> 9
<212> PRT
<213> EBV
<400> 398
Arg Met His Leu Pro Val Leu His Val
                5
<210> 399
<211> 9
<212> PRT
<213> EBV
<400> 399
Pro Met Pro Leu Pro Pro Ser Gln Leu
<210> 400
<211> 9
<212> PRT
<213> EBV
<400> 400
Gln Leu Pro Pro Pro Ala Ala Pro Ala
                5
<210> 401
<211> 9
<212> PRT
<213> EBV
<400> 401
Ser Met Pro Glu Leu Ser Pro Val Leu
```

```
1
          5
<210> 402
<211> 9
<212> PRT
<213> EBV
<400> 402
Asp Leu Asp Glu Ser Trp Asp Tyr Ile
                5
<210> 403
<211> 9
<212> PRT
<213> EBV
<400> 403
Pro Leu Pro Cys Val Leu Trp Pro Val
<210> 404
<211> 9
<212> PRT
<213> EBV
<400> 404
Ser Leu Glu Glu Cys Asp Ser Glu Leu
<210> 405
<211> 9
<212> PRT
<213> EBV
<400> 405
Glu Ile Lys Arg Tyr Lys Asn Arg Val
<210> 406
<211> 9
<212> PRT
<213> EBV
<400> 406
Gln Leu Leu Gln His Tyr Arg Glu Val
<210> 407
<211> 9
```

<212> PRT <213> EBV

```
<400> 407
Leu Leu Gln His Tyr Arg Glu Val Ala
1 5
<210> 408
<211> 9
<212> PRT
<213> EBV
<400> 408
Leu Leu Lys Gln Met Cys Pro Ser Leu
               5
<210> 409
<211> 9
<212> PRT
<213> EBV
<400> 409
Ser Ile Ile Pro Arg Thr Pro Asp Val
<210> 410
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 410
Ala Ile Met Asp Lys Asn Ile Ile Leu
    5
<210> 411
<211> 10
<212> PRT
<213> Haemophilus influenzae
<400> 411
Ile Met Asp Lys Asn Ile Ile Leu Lys Ala
               5
<210> 412
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 412
Leu Leu Ala Leu Leu Ser Cys Leu Thr Val
1 5
                                  10
```

<210> 413

```
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 413
Ile Leu His Thr Pro Gly Cys Val
                 5
<210> 414
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 414
Gln Leu Arg Arg His Ile Asp Leu Leu Val
                 5
<210> 415
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 415
Asp Leu Cys Gly Ser Val Phe Leu Val
                5
<210> 416
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 416
Ser Met Val Gly Asn Trp Ala Lys Val
<210> 417
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 417
His Leu His Gln Asn Ile Val Asp Val
<210> 418
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 418
Phe Leu Leu Ala Asp Ala Arg Val
```

```
<210> 419
<211> 13
<212> PRT
<213> Hepatitis C virus
<400> 419
Gly Leu Arg Asp Leu Ala Val Ala Val Glu Pro Val Val
<210> 420
<211> 11
<212> PRT
<213> Hepatitis C virus
<400> 420
Ser Leu Leu Ala Pro Gly Ala Lys Gln Asn Val
                5
<210> 421
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 421
Leu Leu Ala Pro Gly Ala Lys Gln Asn Val
                5
<210> 422
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 422
Phe Leu Leu Ser Leu Gly Ile His Leu
                5
<210> 423
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 423
Ser Leu Tyr Ala Asp Ser Pro Ser Val
                5
<210> 424
<211> 9
<212> PRT
<213> Hepatitis B virus
```

```
<400> 424
Gly Leu Ser Arg Tyr Val Ala Arg Leu
<210> 425
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 425
Lys Ile Phe Gly Ser Leu Ala Phe Leu
                5
1
<210> 426
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 426
Glu Leu Val Ser Glu Phe Ser Arg Met
<210> 427
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Lys Leu Thr Pro Leu Cys Val Thr Leu
                5
<210> 428
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 428
Ser Leu Leu Asn Ala Thr Asp Ile Ala Val
                5
                                     10
<210> 429
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 429
Val Leu Tyr Arg Tyr Gly Ser Phe Ser Val
<210> 430
<211> 9
```

```
<212> PRT
<213> Homo Sapiens
<400> 430
Tyr Ile Gly Glu Val Leu Val Ser Val
<210> 431
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 431
Leu Leu Phe Asn Ile Leu Gly Gly Trp Val
<210> 432
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 432
Leu Leu Val Pro Phe Val Gln Trp Phe Trp
                5
<210> 433
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 433
Ala Leu Met Pro Leu Tyr Ala Cys Ile
<210> 434
<211> 9
<212> PRT
<213> Hepatitis C virus
Tyr Leu Val Ala Tyr Gln Ala Thr Val
                5
<210> 435
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 435
Thr Leu Gly Ile Val Cys Pro Ile Cys
                 5
```

```
<210> 436
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 436
Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu
                 5
<210> 437
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 437
Leu Leu Pro Ile Phe Phe Cys Leu Trp Val
     5
<210> 438
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 438
Tyr Met Asp Asp Val Val Leu Gly Ala
<210> 439
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
Gly Thr Leu Gly Ile Val Cys Pro Ile
                5
<210> 440
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 440
Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile
<210> 441
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 441
```

```
Met Leu Asp Leu Gln Pro Glu Thr Thr
<210> 442
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 442
Ser Leu Met Ala Phe Thr Ala Ala Val
                5
<210> 443
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 443
Cys Ile Asn Gly Val Cys Trp Thr Val
                5
<210> 444
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 444
Val Met Asn Ile Leu Leu Gln Tyr Val Val
     5
<210> 445
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 445
Ile Leu Thr Val Ile Leu Gly Val Leu
                5
<210> 446
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 446
Phe Leu Trp Gly Pro Arg Ala Leu Val
<210> 447
<211> 9
<212> PRT
```

```
<213> Hepatitis C virus
<400> 447
Leu Leu Cys Pro Ala Gly His Ala Val
               5
<210> 448
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 448
Ile Leu Asp Ser Phe Asp Pro Leu Val
<210> 449
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 449
Leu Leu Cys Leu Ile Phe Leu Leu
               5
<210> 450
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 450
Leu Ile Asp Tyr Gln Gly Met Leu Pro Val
                5
<210> 451
<211> 10
<212> PRT
<213> Hepatitis B virus
<400> 451
Ser Ile Val Ser Pro Phe Ile Pro Leu Leu
      5
<210> 452
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 452
Phe Leu Leu Thr Arg Ile Leu Thr Ile
                5
```

```
<210> 453
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 453
His Leu Gly Asn Val Lys Tyr Leu Val
<210> 454
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 454
Gly Ile Ala Gly Gly Leu Ala Leu Leu
                5
<210> 455
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 455
Ile Leu Ala Gly Tyr Gly Ala Gly Val
                 5
<210> 456
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 456
Gly Leu Gln Asp Cys Thr Met Leu Val
<210> 457
<211> 10
<212> PRT
<213> Hepatitis C virus
<400> 457
Thr Gly Ala Pro Val Thr Tyr Ser Thr Tyr
                5
                                     10
<210> 458
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 458
Val Ile Tyr Gln Tyr Met Asp Asp Leu
```

```
1
         5
<210> 459
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 459
Val Leu Pro Asp Val Phe Ile Arg Cys Val
               5
<210> 460
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 460
Val Leu Pro Asp Val Phe Ile Arg Cys
<210> 461
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 461
Ala Val Gly Ile Gly Ile Ala Val Val
                5
<210> 462
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 462
Leu Val Val Leu Gly Leu Leu Ala Val
             5
<210> 463
<211> 9
<212> PRT
<213> Homo Sapiens
```

Ala Leu Gly Leu Gly Leu Leu Pro Val

<210> 464 <211> 9 <212> PRT <213> HSV-2

<400> 463

```
<400> 464
Gly Ala Gly Ile Gly Val Ala Val Leu
    5
<210> 465
<211> 9
<212> PRT
<213> Pseudorabies virus
<400> 465
Ile Ala Gly Ile Gly Ile Leu Ala Ile
                5
<210> 466
<211> 9
<212> PRT
<213> Adenovirus 3
<400> 466
Leu Ile Val Ile Gly Ile Leu Ile Leu
               5
<210> 467
<211> 9
<212> PRT
<213> S. lincolnensis
<400> 467
Leu Ala Gly Ile Gly Leu Ile Ala Ala
<210> 468
<211> 9
<212> PRT
<213> Yeast
<400> 468
Val Asp Gly Ile Gly Ile Leu Thr Ile
<210> 469
<211> 9
<212> PRT
<213> B. polymyxa
<400> 469
Gly Ala Gly Ile Gly Val Leu Thr Ala
           5
```

<210> 470

```
<211> 9
<212> PRT
<213> Escherichia coli
<400> 470
Ala Ala Gly Ile Gly Ile Ile Gln Ile
                 5
<210> 471
<211> 9
<212> PRT
<213> Escherichia coli
<400> 471
Gln Ala Gly Ile Gly Ile Leu Leu Ala
1 5
<210> 472
<211> 11
<212> PRT
<213> Homo Sapiens
<400> 472
Lys Ala Arg Asp Pro His Ser Gly His Phe Val
                5
<210> 473
<211> 11
<212> PRT
<213> Homo Sapiens
<400> 473
Lys Ala Cys Asp Pro His Ser Gly His Phe Val
               5
<210> 474
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 474
Ala Cys Asp Pro His Ser Gly His Phe Val
<210> 475
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 475
Ser Leu Tyr Asn Thr Val Ala Thr Leu
```

```
<210> 476
 <211> 9
 <212> PRT
 <213> Homo Sapiens
 <400> 476
 Glu Leu Val Ser Glu Phe Ser Arg Val
<210> 477
 <211> 10
 <212> PRT
 <213> Homo Sapiens immunodeficiency virus type 1
 <400> 477
 Arg Gly Pro Gly Arg Ala Phe Val Thr Ile
                   5
 <210> 478
 <211> 9
 <212> PRT
 <213> Hepatitis C virus
 <400> 478
 His Met Trp Asn Phe Ile Ser Gly Ile
 <210> 479
 <211> 10
 <212> PRT
 <213> Homo Sapiens cytomegalovirus
 <400> 479
 Asn Leu Val Pro Met Val Ala Thr Val Gln
                   5
 <210> 480
 <211> 9
 <212> PRT
 <213> Homo Sapiens papillomavirus type 6b
 <400> 480
 Gly Leu His Cys Tyr Glu Gln Leu Val
                  5
 <210> 481
 <211> 9
 <212> PRT
 <213> Homo Sapiens papillomavirus type 6b
```

```
<400> 481
Pro Leu Lys Gln His Phe Gln Ile Val
<210> 482
<211> 10
<212> PRT
<213> EBV
<400> 482
Leu Leu Asp Phe Val Arg Phe Met Gly Val
                 5
<210> 483
<211> 9
<212> PRT
<213> Haemophilus influenzae
<400> 483
Ala Ile Met Glu Lys Asn Ile Met Leu
<210> 484
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 484
Tyr Leu Lys Thr Ile Gln Asn Ser Leu
                5
<210> 485
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 485
Tyr Leu Asn Lys Ile Gln Asn Ser Leu
1
                5
<210> 486
<211> 10
<212> PRT
<213> Homo sapiens papillomaviurs type 16
<400> 486
Tyr Met Leu Asp Leu Gln Pro Glu Thr Thr
                 5
<210> 487
<211> 9
```

```
<212> PRT
<213> Homo sampiens papillomavirus type 16
<400> 487
Leu Leu Met Gly Thr Leu Gly Ile Val
<210> 488
<211> 8
<212> PRT
<213> Homo sampiens papillomavirus type 16
<400> 488
Thr Leu Gly Ile Val Cys Pro Ile
<210> 489
<211> 9
<212> PRT
<213> Homo sapiens immunodeficiency virus type 1
<400> 489
Thr Leu Thr Ser Cys Asn Thr Ser Val
                 5
<210> 490
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 490
Lys Leu Pro Gln Leu Cys Thr Glu Leu
<210> 491
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 491
Thr Ile His Asp Ile Ile Leu Glu Cys
<210> 492
<211> 9
<212> PRT
<213> Homo Sapiens papillomavirus type 16
<400> 492
Leu Gly Ile Val Cys Pro Ile Cys Ser
                 5
```

```
<210> 493
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 493
Val Ile Leu Gly Val Leu Leu Ile
<210> 494
<211> 9
<212> PRT
<213> Axial seamount polynoid polychaete
<400> 494
Ala Leu Met Asp Lys Ser Leu His Val
1 5
<210> 495
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 495
Gly Ile Leu Thr Val Ile Leu Gly Val
<210> 496
<211> 9
<212> PRT
<213> Plasmodium falciparum
<400> 496
Met Ile Asn Ala Tyr Leu Asp Lys Leu
                5
<210> 497
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 497
Ala Ala Gly Ile Gly Ile Leu Thr Val
<210> 498
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 498
```

```
Phe Leu Pro Ser Asp Phe Phe Pro Ser Val
                 5
<210> 499
<211> 9
<212> PRT
<213> EBV
<400> 499
Ser Val Arg Asp Arg Leu Ala Arg Leu
<210> 500
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 500
Phe Ala Tyr Asp Gly Lys Asp Tyr Ile
                5
<210> 501
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 501
Ala Leu Leu Ala Val Gly Ala Thr Lys
                5
<210> 502
<211> 11
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 502
Arg Leu Arg Asp Leu Leu Leu Ile Val Thr Arg
<210> 503
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 503
Gln Val Pro Leu Arg Pro Met Thr Tyr Lys
                5
                                     10
<210> 504
<211> 10
<212> PRT
```

```
<213> Homo Sapiens immunodeficiency virus type 1
<400> 504
Thr Val Tyr Tyr Gly Val Pro Val Trp Lys
<210> 505
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 505
Arg Leu Arg Pro Gly Gly Lys Lys
1
                 5
<210> 506
<211> 9
<212> PRT
<213> haemophilus influenzae
<400> 506
Ile Leu Arg Gly Ser Val Ala His Lys
<210> 507
<211> 9
<212> PRT
<213> EBV
<400> 507
Arg Leu Arg Ala Glu Ala Gly Val Lys
<210> 508
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 508
Val Tyr Tyr Gly Val Pro Val Trp Lys
                5
<210> 509
<211> 9
<212> PRT
<213> Hepatitis C virus
<400> 509
Arg Val Cys Glu Lys Met Ala Leu Tyr
               5
```

```
<210> 510
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 510
Lys Ile Phe Ser Glu Val Thr Leu Lys
<210> 511
<211> 9
<212> PRT
<213> Hepatitis B virus
<400> 511
Tyr Val Asn Val Asn Met Gly Leu Lys
                5
<210> 512
<211> 9
<212> PRT
<213> EBV
<400> 512
Ile Val Thr Asp Phe Ser Val Ile Lys
                5
<210> 513
<211> 8
<212> PRT
<213> Homo Sapiens
<400> 513
Glu Leu Asn Glu Ala Glu Leu Lys
<210> 514
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 514
Val Pro Leu Arg Pro Met Thr Tyr Lys
<210> 515
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 515
Ala Ile Phe Gln Ser Ser Met Thr Lys
```

```
<210> 516
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 516
Gln Val Pro Leu Arg Pro Met Thr Tyr Lys
                 5
<210> 517
<211> 8
<212> PRT
<213> Hepatitis C virus
<400> 517
Thr Ile Asn Tyr Thr Ile Phe Lys
<210> 518
<211> 12
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
Ala Ala Val Asp Leu Ser His Phe Leu Lys Glu Lys
                 5
<210> 519
<211> 12
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 519
Ala Cys Gln Gly Val Gly Gly Pro Gly Gly His Lys
                 5
                                     10
<210> 520
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 520
Ser Tyr Leu Asp Ser Gly Ile His Phe
<210> 521
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
```

1

```
<400> 521
Arg Tyr Leu Lys Asp Gln Gln Leu Leu
     5
<210> 522
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 522
Ala Tyr Gly Leu Asp Phe Tyr Ile Leu
               5
<210> 523
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 523
Ala Phe Leu Pro Trp His Arg Leu Phe Leu
               5
<210> 524
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 524
Ala Phe Leu Pro Trp His Arg Leu Phe
<210> 525
<211> 8
<212> PRT
<213> EBV
<400> 525
Arg Tyr Ser Ile Phe Phe Asp Tyr
1
               5
<210> 526
<211> 10
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 526
Glu Thr Ile Asn Glu Glu Ala Ala Glu Trp
```

<210> 527

```
<211> 11
<212> PRT
<213> Hepatitis B virus
<400> 527
Ser Thr Leu Pro Glu Thr Thr Val Val Arg Arg
                5
<210> 528
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 528
Met Ser Leu Gln Arg Gln Phe Leu Arg
   5
<210> 529
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 529
Leu Leu Pro Gly Gly Arg Pro Tyr Arg
                5
<210> 530
<211> 9
<212> PRT
<213> Homo Sapiens immunodeficiency virus type 1
<400> 530
Ile Val Gly Leu Asn Lys Ile Val Arg
<210> 531
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 531
Ala Ala Gly Ile Gly Ile Leu Thr Val
<210> 532
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 532
Glu Val Asp Pro Ala Ser Asn Thr Tyr
```

```
<210> 533
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 533
Glu Val Asp Pro Thr Ser Asn Thr Tyr
<210> 534
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 534
Glu Ala Asp Pro Thr Ser Asn Thr Tyr
<210> 535
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 535
Glu Val Asp Pro Ile Gly His Val Tyr
                5
<210> 536
<211> 11
<212> PRT
<213> Homo Sapiens
<400> 536
Met Leu Leu Ala Val Leu Leu Tyr Cys Leu Leu
                5
<210> 537
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 537
Met Leu Leu Ala Val Leu Tyr Cys Leu
                5
<210> 538
<211> 10
<212> PRT
<213> Homo Sapiens
```

```
<400> 538
Ser Glu Ile Trp Arg Asp Ile Asp Phe Ala
                5
<210> 539
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 539
Ser Glu Ile Trp Arg Asp Ile Asp Phe
                5
<210> 540
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1) ... (9)
<223> Xaa = Any Amino Acid
<400> 540
Xaa Glu Ile Trp Arg Asp Ile Asp Phe
                5
<210> 541
<211> 11
<212> PRT
<213> Homo Sapiens
<400> 541
Ser Thr Leu Val Glu Val Thr Leu Gly Glu Val
<210> 542
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 542
Leu Val Glu Val Thr Leu Gly Glu Val
                5
<210> 543
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 543
Val Ile Phe Ser Lys Ala Ser Glu Tyr Leu
```

```
<210> 544
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 544
Ile Ile Val Leu Ala Ile Ile Ala Ile
               5
<210> 545
<211> 11
<212> PRT
<213> Homo Sapiens
<400> 545
Lys Ile Trp Glu Glu Leu Ser Met Leu Glu Val
                 5
<210> 546
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 546
Leu Ile Glu Thr Ser Tyr Val Lys Val
                5
<210> 547
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 547
Phe Leu Trp Gly Pro Arg Ala Leu Val
                5
<210> 548
<211> 10
<212> PRT
<213> Homo Sapiens
<400> 548
Thr Leu Val Glu Val Thr Leu Gly Glu Val
<210> 549
<211> 10
<212> PRT
<213> Homo Sapiens
```

5

10

```
<400> 549
Ala Leu Val Glu Thr Ser Tyr Val Lys Val
<210> 550
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 550
Lys Ile Trp Glu Glu Leu Ser Val Leu
1
<210> 551
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 551
Glu Val Asp Pro Ile Gly His Leu Tyr
                 5
<210> 552
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 552
Glu Xaa Asp Xaa Xaa Xaa Xaa Tyr
                5
<210> 553
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 553
Glu Ala Asp Pro Thr Gly His Ser Tyr
<210> 554
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
```

```
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 554
Glu Ala Asp Xaa Xaa Xaa Xaa Tyr
<210> 555
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 555
Glu Ala Asp Pro Xaa Xaa Xaa Xaa Tyr
                5
<210> 556
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 556
Glu Ala Asp Pro Ile Xaa Xaa Xaa Tyr
                 5
<210> 557
<211> 9
<212> PRT
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 557
Glu Ala Asp Pro Ile Gly Xaa Xaa Tyr
<210> 558
<211> 9
<212> PRT
```

```
<213> Homo Sapiens
<220>
<221> VARIANT
<222> (1)...(9)
<223> Xaa = Any Amino Acid
<400> 558
Glu Ala Asp Pro Ile Gly His Xaa Tyr
<210> 559
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 559
Glu Ala Asp Pro Ile Gly His Leu Tyr
                5
<210> 560
<211> 16
<212> PRT
<213> Homo Sapiens
<400> 560
Glu Leu His Ser Ala Tyr Gly Glu Pro Arg Lys Leu Leu Thr Gln Asp
                 5
<210> 561
<211> 12
<212> PRT
<213> Homo Sapiens
<400> 561
Glu His Ser Ala Tyr Gly Glu Pro Arg Lys Leu Leu
                5
<210> 562
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 562
Ser Ala Tyr Gly Glu Pro Arg Lys Leu
<210> 563
<211> 9
<212> PRT
<213> Homo Sapiens
```

```
<400> 563
Glu Ala Asp Pro Thr Gly His Ser Tyr
                 5
<210> 564
<211> 16
<212> PRT
<213> Homo Sapiens
<400> 564
Met Ala Ala Arg Ala Val Phe Leu Ala Leu Ser Ala Gln Leu Leu Gln
                 5
<210> 565
<211> 16
<212> PRT
<213> Homo Sapiens
<400> 565
Met Ala Ala Arg Ala Val Phe Leu Ala Leu Ser Ala Gln Leu Leu Gln
                5
                                     10
<210> 566
<211> 9
<212> PRT
<213> Homo Sapiens
<400> 566
Ala Ala Arg Ala Val Phe Leu Ala Leu
                 5
<210> 567
<211> 8
<212> PRT
<213> Homo Sapiens
<400> 567
Tyr Arg Pro Arg Pro Arg Arg Tyr
                5
1
<210> 568
<211> 9
<213> Homo Sapiens immunodeficiency virus type 1
<400> 568
Asp Leu Asn Thr Met Leu Asn Thr Val
<210> 569
<211> 9
```

<212> PRT <213> LCKV <400> 569 Lys Ala Val Tyr Asn Phe Ala Thr Cys 1 5